

Tennessee Pollution Prevention Partnership Success Story



James H. Quillen
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ON Site Management Of Waste Reduces Volume And Exposure

The Member

James H. Quillen VA Medical Center is a tertiary care facility providing a full range of patient care services, with state-of-the-art technology as well as education and research. Comprehensive health care is provided through primary care, tertiary care, and long-term care in areas of medicine, surgery, psychiatry, physical medicine and rehabilitation, neurology, oncology, dentistry, geriatrics, and extended care. In addition to providing acute care, the James H. Quillen VA Medical Center offers geriatric and rehabilitation services through its 120-bed Nursing Home Care Unit. The facility also operates a 348-bed Domiciliary that offers a variety of treatment options, which includes a Homeless inpatient treatment program and Homeless Outreach. James H. Quillen VA Medical Center has an active affiliation with the James H. Quillen College of Medicine at East Tennessee State University. The medical school is housed on the grounds of the VA Medical Center and is utilizing the property through Enhanced-Use Leasing agreement. Over 300 University residents, interns, and students are trained at the James H. Quillen VA Medical Center each year. There are also nursing student affiliations with East Tennessee State University, University of Tennessee, Vanderbilt University and five other nursing schools. There are other major university affiliations with our medical center involving dentistry, pharmacy, social work, and psychology. A U.S. National Cemetery is also located on the grounds of the VA.

The Story

Since 1998, the James H. Quillen VA Medical Center has recycled their lamps offsite. However a project just implemented now allows them to crush the bulbs on site, totally capturing all the mercury, glass, and end caps, while emitting zero air emissions and saving money.

Challenges associated with the former method of bulk recycling included an inability to safely handle/store the 8' bulbs, on site space limitations that frequently resulted in broken lamps, pick-up schedule conflicts, and cost. An evaluation by the green environmental management team showed that as much as 20% of bulbs were broken on site prior to recycling, resulting in numerous complaints from the recycler. Mercury rapidly vaporizes into the atmosphere when a bulb is broken, resulting in potential human health hazard and adding to total mercury in the environment. After extensive analysis and evaluation of numerous options, the green environmental management team recommended recycling the lamps on site to decrease exposure risks and to reduce volume. Once in place, the Air Cycle bulb-crushing machine required personnel training to meet OSHA standards prior to operation.

The Success

Now with the system in operation, a drum of crushed lamps equates to what was previously three truckloads of bulk lamps (45 bulk 4' bulbs per drum versus 1700 crushed 4' bulbs per drum). Cost for the revised system of disposal is \$.25/lamp as opposed to the previous \$.49/lamp times 6000 lamps/year (\$1500.00 savings annually) while eliminating numerous handling challenges.

The Pollution Prevented

With approximately 6000 lamps per year and 20% of those being broken on site, mercury emissions are reduced by 1,440 mg/year. Broken glass waste of 2,400 pounds/year to the landfill is eliminated. Reduction in transport volume from three truckloads annually to two drums further reduces air emissions during transport.

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